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ROYAL BOTANIC GARDENS, KEW

V.—ADDITIONS AND AMENDMENTS TO THE INTERNATIONAL RULES OF BOTANICAL NOMENCLATURE, Ed. 3.

The various proposals printed below have been contributed by the following twelve botanists :—

(1) Royal Botanic Gardens, Kew : J. S. L. Gilmour, M. L. Green, T. A. Sprague.

(2) Department of Botany, British Museum : J. E. Dandy, A. W. Exell, J. Ramsbottom, G. Tandy, A. J. Wilmott.

(3) Botanical Museum, University of Utrecht : J. Lanjouw.

(4) Gray Herbarium, Harvard University : M. L. Fernald.

(5) W. T. Stearn (London).

(6) Fr. Verdoorn (Leiden).

The appearance of these proposals in one number of the Kew Bulletin is simply a matter of practical convenience, responsibility for the individual motions resting solely on their proposers.

In order to facilitate comparison with the relevant Articles and Recommendations, the motions are arranged in the order of the International Rules, ed. 3 ; and each is supplied with a running number for purposes of reference.

Some of the proposals, e.g. nos. (7) and (9), and nos. (10) and (29), are mutually complementary ; others, e.g. nos. (16) and (17), offer alternative solutions of the same problem, based on conflicting nomenclatural views. They are all brought forward with the desire to perfect the International Rules in the interests of botanical research. Nomenclature is a means to an end, not an end in itself.

Many of the motions consist of small but significant textual amendments, which obviously could not be published until the precise text of the International Rules was known. An English version of the Rules was issued in advance in the Journal of Botany for June 1934, but the third edition, containing the official text, did not appear until February 1935. Hence the delay in the publication of the present proposals. T.A.S.

PROPOSALS.

(1) Art. 2, line 7. That the word " especially " be inserted before " in future nomenclature."

Remarks. The present wording gives the impression that the Recommendations are concerned *solely* with future nomenclature,

which is not the case. Rec. XLIII, for example, applies also to names already published. T. A. SPRAGUE.

(2) Art. 14 : in line 2 delete " modification or," and replace the second use of the word " modification " by the word " subdivision."

Argument. The present wording is not uniform ; the alteration suggested conforms with the French text. A. J. WILMOTT.

(3) Art. 19. Add :—" The works listed in Appendix IX, in which works nomenclature contrary to or in conflict with that legitimised by these Rules is used, are to be regarded as not validly published, although they appeared subsequently to the dates given in Art. 20."

Argument. These works include those in which " multiverbal names " are used for species, concerning which a proposal was made to the last Congress. The issue was somewhat confused there by the fact that the motion was changed in an endeavour to meet certain objections, which resulted, however, in misunderstandings. The present proposal is framed in such a way as to provide a mechanism under the Rules by which any work can be rejected if it is found to create undesired difficulties to the smooth operation of the Rules. The reasons for inclusion of certain works suggested for the Appendix are given with the lists.* A. J. WILMOTT.

(4) Art. 20. That the following paragraph be added at the end of the Article :—" The two volumes of Linnaeus, Species Plantarum, ed 1 (1753), which appeared in May and August, 1753, respectively, are treated as having been published simultaneously on the former date."

Example. " The generic names *Thea* L. Sp. Pl. ed. 1, I. (May 1753) and *Camellia L.* Sp. Pl. ed. 1, II. (Aug. 1753) are treated as having been published simultaneously in May, 1753. Under Art. 56, the combined genus bears the name *Camellia*, since Sweet (Hort. Suburb. Lond. 1818, 157), who was the first to unite the two genera, chose that name citing *Thea* as a synonym."

Remarks. The above additional paragraph is proposed not so much to settle the question as to whether the generic name *Thea* or *Camellia* is to be adopted for the combined genus, but in order that a decision should be reached as to whether the two volumes of the Species Plantarum should be regarded as having been simultaneously published. If strict priority is adhered to, *Thea* is the correct name for the genus, as pointed out by Rehder in Journ. Arnold Arb. V (1924) 238.

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* See proposal No. (42).

Under Art. 20, generic names which appear in L. Sp. Pl. ed. 1 (1753) are associated with the descriptions given in L. Gen. Pl. ed. 5 (1754), so that these *two works* are treated as one for the purpose of the starting-point of nomenclature, although they actually appeared in different years. The *two volumes* of the Species Plantarum were treated as inseparable parts of one work until comparatively recently when it was discovered by B. D. Jackson (Journ. Bot. 1923, 174) that the second volume appeared three months later than the first.

Since legitimate botanical nomenclature actually starts with particular *works* of Linnaeus which themselves appeared in different years (1753 and 1754) but are for nomenclatural purposes regarded as both dating from 1753, it is inconsistent to allow nomenclatural priority to the first volume of Species Plantarum which appeared only three months before the second. M. L. GREEN.

(5) Art. 20. For " at the following dates " read " with the following works."

Remarks. At present there is some difficulty in interpreting (f) Fungi caeteri, 1821–32 (Fries, *Systema mycologicum*), which will be removed if it is clear that the work is the important point (see *Trans. Brit. Mycol. Soc.* XVIII (1934) 314. For the alternative view see C. W. Dodge in *Ann. Missouri Bot. Gard.* XXI (1934) 709.) The *Elenchus Fungorum* was published in 1828 and was re-issued in 1830 as a supplement to the *Systema.* The *Elenchus* should be regarded as part of the *Systema.* See *Trans. Brit. Mycol. Soc.* XVIII (1934) 316. J. RAMSBOTTOM.

(6) Rec. IX for " are designated preferably by " read " are preferably taken from."

Argument. The existing formulation would appear to require *Polygonaceaeales,* and not *Polygonales.* Discussion of these minor matters was waived at Cambridge owing to the Chairman's ruling that they should be left for correction by the Editorial Committee. A. J. WILMOTT.

(7) Art. 23. Replace the first sentence by the following :— " Names of families (*familiae*) are formed from the accepted name of the type-genus by adding the suffix *-aceae* to the stem of the generic name."

Argument. See under Art. 24. A. J. WILMOTT.

(8)* Art. 23. Alter the wording to read : " Names of families

* No. (8) is proposed if No. (7) and (9) are rejected.

are taken from the name or ancient name of one of their present genera, and end in *-aceae.*"

Argument. The present wording permits the retention of a family name after the genus from whose name it was taken has been removed to another family. The suggested wording is probably what was intended.

Note. The French text retains the old erroneous form which was responsible for the change suggested by the British Sub-committee, for as it stands it would seem to require the use of such forms as *Salixaceae*, and not *Salicaceae.* A. J. WILMOTT.

(9) Art. 24. Replace the first sentence by the following :— " Names of sub-families (*subfamiliae*) are formed from the names of their type-genera by adding the suffix *-oideae* to the stem of the generic name ; similarly those of tribes (*tribus*) by adding the suffix *-eae*, and of sub-tribes (*subtribus*) by adding *-inae.*

Argument. These proposals put forward at the last Congress by the British Sub-committee are suggested again for the following reasons. The examples here given indicate the need for changing the existing loose wording of the Rules concerned.

The name of a family of Diatoms is *Chaetoceraceae* (original spelling) or *Chaetocerotaceae* (orthographically correct form). Under the present working of Art. 23 the less correct form must be used, whereas the form of words used by the British Sub-committee was chosen to enable the correct forms to be used. This avoids the necessity of memorising all legitimate incorrect forms. Under the present Rules it would be possible to have one form valid (with its correct ending) for the name of the family and the other equally valid for a similar name of a sub-family.

Euodiaceae, the name of another family of diatoms, is taken from *Euodia* Bailey 1861. It has been shown that *Euodia gibba* Bailey 1861 is *Hemidiscus cuneifolia* Wall 1860, and the name *Euodia* lapses into synonymy. It seems undesirable in such circumstances to retain *Euodiaceae* as the name of the family.

One solution might be to propose *Euodia* for conservation, but *Euodia* Bailey was invalid owing to the existence of *Euodia* Forster 1776 (Char. Gen. 13 t. 7). If the name of the family must by Rule be formed from a valid generic name included in the family, any disharmony is avoided. A. J. WILMOTT.

(10) Rec. X. That the following be inserted after Rec. X g : " Rec. X h. To give a feminine form to all personal generic names, whether they commemorate a man or a woman."

Remarks. See observations under no. (29). FR. VERDOORN.

(11) Art. 31 : (2) Example of a sexual hybrid : delete the " *S.*" before *Lycopersicum.*

Argument. This example must be made uniform with those of sexual hybrids. As we are dealing with a " formula " it seems undesirable to repeat the generic name. But if the generic name is not repeated the formulation of the rule is slightly inaccurate.

A. J. WILMOTT.

(12) Art. 43. Interchange the comma at the end of the second line with the semicolon in the third line.

Argument. As punctuated at present the Rule is ambiguous in the English text ; cf. the French text. A. J. WILMOTT.

(13) " Art. 47 bis. When a name, which is neither *nomen dubium* nor *nomen confusum* (see Art. 63 & 64) has become a source of confusion or error owing to its use with different meanings (*nomen ambiguum*), its use must be precised by the additional citation responsible for the usage which is at the time being employed."

Argument. This was the substance of a proposal which I originally made to the British Sub-committee. It is scarcely necessary to reject a name or epithet which, possibly through no fault of the original author other than insufficiency of description (a fault shared by many names not ambiguous at any time), has been variously interpreted by subsequent authors. All that is required is a form of citation which permits a clear indication of the usage actually employed by a writer during the period, sometimes comparatively short, when diverse interpretations are being upheld. The example of *Rosa villosa* L. appears to be more properly dealt with by citation of an emending author, as under Art. 47. The object of this proposal was to make clear the distinction between those cases where the confusion was made in the original publication—cases often without any satisfactory solution (the true *nomina confusa*)—and the mere *nomina ambigua* where there was no original confusion but only subsequent disagreement. A. J. WILMOTT.

(14) Art. 49. In the first sentence delete all after " followed " and insert instead " by an indication of the original use of the name or epithet." In the examples, for " *Medicago orbicularis* (L.) All." read *Medicago orbicularis* (L.: *M. polymorpha* var.) ; for " *Aspalathoides* (DC.) K. Koch " read " *Aspalathoides* (DC.: *Anthyllis* sect.) " ; for " *Pyrus* sect. *Aria* (Pers.) DC." read " *Pyrus* sect. *Aria* (Pers.: *Sorbus* sect.) ; for " *Matthiola tristis* (L.) R. Br." read " *Matthiola tristis* (L.: *Cheiranthus* sp.).

Argument. This proposal is put forward as a solution of the difficulties arising from Art. 54, last sentence. These difficulties appear to be due to the admixture of taxonomy (change of rank, reclassification) with nomenclature, which does not need the citation of a second author for the attainment of precision. In Zoology it has

not been found necessary to cite a second author. The precision is obtained by the citation of the author on whose publication the type depends.

The citation of a second author may assist in the determination of later homonyms, but the loss of this advantage may be much more than balanced by the gain in simplicity and the avoidance of the trouble under Art. 54. A. J. WILMOTT.

(15) Rec. XXXII ter. When citing a wrong identification, the name of the group and its author should be placed between inverted commas, followed by the name of the author who misapplied it.

Example. "*Tulipa Borszczowi* Regel" Baker in Bot. Mag. t.6635 (1882), a synonym of *Tulipa Kolpakowskiana* Regel.

Remarks. This method of citation at once distinguishes a misidentification from a later homonym. W. T. STEARN.

(16) Art. 54 line 7. The second paragraph to read :—"When on transference to another genus, the specific epithet has been applied erroneously in its new position to a different plant, the combination must be retained for the plant on which the epithet was originally based and must be attributed to the author who first correctly used the combination for the right plant. The incorrect use must not be treated as an earlier homonym."

To the examples add at end after "epithet":—"*Tsuga Mertensiana* (Bong.) Sargent [non Carrière in errore.]"—see Journ. Bot. Suppl. 1934, p. 20. J. RAMSBOTTOM.

(17) Art. 54. That the second paragraph should read as follows :—"When the specific epithet, on transference to another generic name, has been applied erroneously in its new position to a different species, the new combination must be retained for the plant on which the epithet was originally based.

Example. The specific epithet of *Pinus Mertensiana* Bong. was transferred to *Tsuga* by Carrière, who, however, erroneously applied the new combination *Tsuga Mertensiana* (Bong.) Carr. to another species of *Tsuga*, namely to *T. heterophylla* (Raf.) Sarg. as is evident from his description : the combination *Tsuga Mertensiana* (Bong.) Carr. must be retained for *Pinus Mertensiana* Bong. when that species is placed in *Tsuga* ; the citation in parenthesis (under Art. 49) of the name of the original author, Bongard, indicates the type of the epithet. If desired the words "em. Sarg." may be added (under Art. 47).

Remarks. The text of Art. 54, paragraph 2, is ambiguous, since it does not make it clear to whom the accepted combination

isto be attributed, whether to the original author of the combination who misapplied it, or to the first subsequent botanist who applied it " correctly." Under Art. 47, however, " an alteration of the diagnostic characters or of the circumscription of a group does not warrant the citation of an author other than the one who first published its name. When the changes have been considerable, an indication of their nature, and of the author responsible for the change is added." Hence it is not permissible to *replace* Carrière's name by that of Sargent as the author of the combination *Tsuga Mertensiana* (Bong.) published by the former, though Sargent's name may be appended as an emending author, the correct full citation in that case being *Tsuga Mertensiana* (Bong.) Carr. em. Sarg.

The view that a combination should be attributed to the first author who applied it *correctly* is open to very grave objections. Priority of publication is one of the most important general principles on which the Rules are based (Art. 16). The importance of the *date* of publication is shown by the fact that an entire section of the Rules (section 6, Art. 37–45) is devoted to it. Since differences of taxonomic opinion frequently arise as to the " correct " application of a name, the effect of ascribing the new combination to the first author who applied it " correctly " would be to make the date of publication either uncertain or a mere matter of taxonomic opinion.

The case of *Daphnopsis americana* (Mill.) is instructive. This combination was based by J. R. Johnston (Proc. Boston Soc. Nat. Hist. xxxiv. 242 : 1909) on *Laurus americana* Mill. (1768). Under the type-method, *Daphnopsis americana* (Mill.) J. R. Johnston is strictly synonymous with *Laurus americana* Mill., the " (Mill.) " indicating the type of the epithet. This is not affected by the fact that Johnston, rightly or wrongly, cited *Daphne tinifolia* Sw. and *Daphnopsis tinifolia* Griseb. in synonymy, and cited also a specimen (no. 257) which he had collected on Margarita Island. Urban (Arkiv för Botanik, xvii. no. 7, 44 : 1921) stated that the specimen cited by Johnston was not *Daphnopsis americana* (Mill.) J. R. Johnston, but *D. caribaea* Griseb., but he did not think it necessary on that account to reject J. R. Johnston as the author of the combination, but merely added " (excl. specim.) " to the citation. Urban also cited *Daphne tinifolia* Sw. and *Daphnopsis tinifolia* Griseb. as synonyms of *Daphnopsis americana.* Fawcett and Rendle (Journ. Bot. 1925, 51), stated that the specimens of *Laurus americana* Mill. and *Daphne tinifolia* Sw. in Herb. Mus. Brit. represented different species. They considered that the combination *Daphnopsis americana* should, under a type-system, be associated with the plant (Houston's Vera Cruz specimen) on which the epithet *americana* was originally based by Miller : on this point we are all agreed. Fawcett and Rendle proceeded, however, to set out the synonymy of the three species concerned, as follows :—

" 1. *Daphnopsis americana* Johnston (1909), a synonym of *D. caribaea* Griseb. (1860) (*fide* Urban). Lesser Antilles.

2. *Daphnopsis americana* Urban (1921), a synonym of *D. tinifolia* Griseb. Jamaica, Hispaniola.

3. *Daphnopsis americana* nob., *Laurus americana* Mill. Mexico."

At the time when their paper was written, it was not obligatory to cite the original author of an epithet in brackets after a new combination, and the name " *Daphnopsis americana* J. R. Johnston " was admittedly somewhat ambiguous. The situation has now become completely changed by the provision in Art. 49, under which " the original author of an epithet must be cited in parenthesis," and the recognition (under Art. 54) that " the citation in parenthesis (under Art. 49) of the name of the original author . . . indicates the type of the epithet."

If the view put forward by Fawcett and Rendle in 1925, and supported by J. Ramsbottom in proposal no. (16) of this series, is maintained, the *date of publication* of the accepted combination *Daphnopsis americana* (Mill.) instead of being a matter of ascertainable *fact*, becomes a mere matter of *opinion*. If J. R. Johnston was correct in his taxonomic work on *Daphnopsis americana* (Mill.) the date of that combination is 1909 ; if Urban was correct, the date is 1921 ; if Fawcett and Rendle were correct, the date is 1925. This will lead to an impossible situation. T. A. SPRAGUE.

(17 bis). Art. 55. paragraph 2, to read as follows :—"When the epithet of a subdivision of a species, on transference to another genus or species, has been applied erroneously in its new position to a different subdivision of the same rank, the new combination must be retained for the plant on which the former combination was based."

Remarks. This proposal and no. (17) are mutually complementary. T. A. SPRAGUE.

(18) Art. 58 : Omit " when a sub-division of a species becomes a species " ; after the word " group " in the third line add " above the rank of species " ; delete " or epithet " and " or combination." A. J. WILMOTT.

(19) Art. 58 bis. In the case of species and their sub-divisions, when the rank of the group is raised the earliest legitimate epithet given to the group in its new rank is valid, unless that name or the resulting combination is a later homonym (see Art. 60, 61) but when the rank is lowered the earliest legitimate epithet of highest rank must be retained or reinstated.

Argument. The aim of this proposal is to attain as much fixity of epithet regardless of rank as can be obtained without the inconvenience of having to replace established specific epithets by unknown epithets of lower rank. Such fixity of epithet would produce a desirable fixity of type for a given group. As the Rules now stand a given group may be legitimately designated by one epithet as a species, by another as a sub-species, by a third as a variety, and so on, each epithet having a different type. The present proposal would ensure that once a group had at any time been given the rank of species, its epithet and type would be fixed so long as the known synonymy remained unchanged. A. J. WILMOTT.

(20) Art. 60. At the end of the second sentence add " except as indicated under Art. 61."

Argument. As Art. 60 and 61 now stand, there appears to be some contradiction, for by Art. 60 an earlier " illegitimate homonym should not be taken into consideration for purposes of priority," and therefore should not be held to antedate the later homonym. A. J. WILMOTT.

(21) Art. 60 (1) to read as follows :—" If it was nomenclaturally superfluous when published, i.e. if the group to which it was applied, as circumscribed by its author, included the type of a name which he (or she) ought to have adopted under one or more of the Rules."

The second example to read as follows :—" The genus *Unisema* Raf. (*Med. Repos. N. York,* V. 192 : 1819) was so circumscribed as to include *Pontederia cordata* L., the type of *Pontederia* L. (1753). Under Art. 50, Rafinesque ought to have adopted the name *Pontederia* L. for the genus concerned. *Unisema* was therefore nomenclaturally superfluous."

Remarks. The new wording is designed to remove any possible ambiguity regarding the effect of Art. 60 (1). T. A. SPRAGUE.

(22) Art. 60 : 1) delete " there " and substitute " its author cited a name which with his taxonomic interpretations and synonymy." 2) after " author " add " with his taxonomic interpretations and synonymy."

Argument. Salisbury, in a work (*Prodromus*) in which he deliberately replaced existing specific epithets by new ones, gave the name *Ulmus procera* to the plant which he believed to be *Ulmus campestris* L. (emend. Mill.). *Ulmus procera* Salisbury is therefore as illegitimate as the other names in the same work, although by *Ulmus campestris* Linnaeus apparently intended the commonest wild European Elm (=*U. montana* Stokes in With.), the only

Elm wild in Sweden and the only one in his herbarium. Salisbury, with his interpretation of *U. campestris* L., could not, according to these Rules, put aside the Linnean epithet and use a new one. The view that although throughout the work Salisbury was acting illegally, he nevertheless in this case accidentally acted according to the Rules and did a right thing, i.e. gave a new epithet to a plant which is now known to require one, is contrary to established nomenclatural custom, which was established definitely in the last edition of the Rules by the rejection of willkürliche Namensveränderungen. *Ulmus procera* was such a deliberate name-change, and the position should be made definite by the insertion of the words suggested in this proposal. A. J. WILMOTT.

(23) Art. 61 Add :—" When an author simultaneously publishes the same new name for more than one group, one use must be considered valid and the other an illegitimate homonym. When the author has himself indicated—in " errata " or in subsequent publications—which of the names he rejects, his choice must be followed unless a different choice has previously been published. When the author has not made the necessary correction, the application which comes first in the work, or that with the lowest number in the case of names validly published with numbered exsiccata, is to be taken as valid, and that following it, or with higher number, as a later homonym."

Examples. Linnaeus (Species Plantarum 1753) published *Aira* 1 *spicata* on p. 63 and *Aira* 7 *spicata* on p. 64, but in " errata " (vol. II after " Nomina Trivialia " and " Addenda," line 9 from base) substitutes *indicum* for *spicatum* of species 1 on p. 63 : the name *Aira spicata* L. is therefore valid for species 7 on p. 64.—Sennen (1929 : Plantes d'Espagne) published *Polygonum Rechingeri* no. 7067 (" sp. coll. *Persicaria* ? " : collected 24.8.1929) and also *Polygonum Rechingeri* no. 7218 (=*P. equisetiforme* auct. hisp. non Sibth. et Sm.: collected 17.8.1929) ; in the absence of any correction by the author the former of these uses is valid. A. J. WILMOTT.

(24) Art. 62. Add the following Example :—

Ulmus campestris L. Sp. Pl. 225 has been used by various authors for *U. nitens* Moench, *U. minor* Mill. sec. Henry, *U. glabra* Huds., and *U. procera* Salisb., and has therefore become a *nomen ambiguum* (see Kew Bull. 1933, 503). J. S. L. GILMOUR.

(25) Art. 62. The first sentence to read as follows :—" A name of a taxonomic group must be rejected if, owing to segregation, it is used with different meanings, and so becomes a permanent source of confusion or error."

Add the following Example :—

Lavandula Spica L. Sp. Pl. 572 included the two species subsequently known as *L. officinalis* Chaix and *L. latifolia* Vill. The name *Lavandula Spica* has been applied almost equally to these two species and, being now completely ambiguous, must be rejected (see Kew Bull. 1932, 295).

Remarks. Typical *nomina ambigua* are names which, originally applied to a group consisting of two or more elements and having no obvious type, have been restricted by some subsequent botanists to one of the original elements, and by other botanists to another. Thus Loiseleur, Bertoloni, Nyman, Briquet, Fiori et Paoletti, Schinz et Thellung, L. H. Bailey and Rehder used the name "*Lavandula Spica* L." in the sense of "Lavender," *L. officinalis* Chaix ; whereas Chaix, Gingins, Bentham, De Notaris, Masters, Flückiger, Greenish and Sprague et Nelmes used it in the sense of "Spike," *Lavandula latifolia* Vill. The name *Lavandula Spica* L. has, therefore, become completely ambiguous. This ambiguity cannot be removed in any practical way, even by citing the name of an emending author. If the name is cited "*Lavandula Spica* L. em. Loisel." it may require considerable investigation, by those who are unaware of the above-mentioned paper, to discover what is meant. Furthermore, many of those who constantly employ botanical names, but are not taxonomic botanists (e.g. physiologists, ecologists, gardeners, foresters, pharmacists) seldom add the name of the author. Hence Art. 62 and the example of *Lavandula Spica* are absolutely in accordance with the general principle laid down in Art. 4 (2) : "to avoid or to reject the use of forms and names which may cause error or ambiguity or throw science into confusion."

M. L. GREEN and T. A. SPRAGUE.

(26) Art. 62. Delete, and replace by Art. 47 bis. A. J. WILMOTT.

(27) Rec. XXXVII. Before the last sentence add :—"The connective *secundum* (abbreviated *sec.*) should be used between the names of the original and certifying authors."

Argument. It seems desirable that the connectives used in nomenclature should each be given a precise function and meaning.

A. J. WILMOTT.

(28) Art. 70. Note 1. Add the following :—"They do not refer to the use of an initial capital or small letter, this being a question of typography dealt with by Art. 25 and 26 for names of genera and subgenera, etc., and by Rec. XLIII for specific and other epithets."

T. A. SPRAGUE.

(29) Art. 70. Add: "Note 2 bis. The publication of a personal generic name in a masculine form (with the termination *-us* or *ius*) instead of the feminine (*-a* or *-ia*) is treated as an unintentional orthographic error which must be corrected (see Rec. X h).

Examples. The generic names *Riccardius, Marchesinius* (*Marchesinus*), *Bazzanius, Herbertus* and *Pallavicinius,* published by S. F. Gray, Nat. Arr. Brit. Pl. I (1821), 683, 689, 704, 705, 775, are treated as unintentional orthographic errors for *Riccardia, Marchesinia, Bazzania, Herberta* and *Pallavicinia* respectively" (motion approved by the Sub-committee for Hepaticae).

Remarks. To the present day all hepaticologists, with very few exceptions, have opposed the use of the masculine (original) form of Gray's generic names.

Most workers on hepaticology, among them the three best and most influential authors Spruce, Schiffner and Evans follow Carruthers (1865) and use the feminine form of these names.

Some authors, however, refused to use Gray's generic names, notwithstanding their undoubted priority and the fact that they had been given to some of the most important and largest genera of Hepaticae. Generally they admit the priority of the masculine form of these names, but do not want to use it as it has almost never been used before. They consider the feminine form as something conflicting with the rules and adopt, therefore, names given by later authors.

As everywhere the principle of priority is not adhered to, great confusion is caused, which should force us to acknowledge as correct the feminine form of these names, as used by Spruce, Schiffner and Evans.

Nearly all problems of the complicated nomenclature of the hepatics would be solved if the above proposal were adopted, if not we should be forced to propose a considerable number of Nomina Conservanda et Rejicienda.

It might be superfluous to assert that the arguments formerly brought against Gray's generic names no longer have any significance in the light of the present Rules. FR. VERDOORN.

(30) Rec. XLIII. To read as follows:—"Specific (or other) epithets should be written with a small initial letter, except those which are derived from names of persons (substantives or adjectives) or are taken from generic or vernacular names (substantives or adjectives)."

Add the following examples:—"*Schinus Molle* (Peruvian vernacular name) *Astrocaryum Tucuma* (Brazilian vernacular name)."

Remarks. The present wording of Rec. XLIII puts a great burden on those who have to prepare and edit general lists of botanical names. It is often a very long and difficult task to discover whether a particular vernacular name has been used as a pre-Linnean generic name or not. M. L. GREEN.

(31) Rec. XLIII. For " taken from " read " are former."

Argument. As formulated at present, the Recommendation would advise the spelling of epithets such as *taxifolia, ranunculifolia* etc. with initial capitals, contrary to established usage. *Hyssopifolia* is an old generic name, but while the wording of the Recommendation remains as at present, it is a misleading example.

A. J. WILMOTT.

(32) That Art. 72 (1) be replaced by the following :—" A Greek or Latin word adopted as a generic name retains its classical gender. In cases where the classical gender varies the author has the right of choice between the alternative genders. In doubtful cases, general usage must be followed.

The following names, however, whose classical gender is masculine, are treated as feminine in accordance with historic usage : *Adonis, Orchis, Stachys, Diospyros, Strychnos; Hemerocallis* (m. in Sp. Pl.: Lat. and Gr. hemerocalles, n.) is also treated as feminine in order to bring it into conformity with all other generic names ending in *-is.*"

Explanatory remarks. The effect of the change will be to standardize the gender of classical generic names. It involves altering the gender of Linnean generic names (Phanerogamae) in only 15 cases. The following names become masculine : *Cissus, Cistus, Aspalathus, Scorpiurus, Potamogeton, Tragopogon, Erigeron, Croton, Panax, Styrax.* The following become feminine : *Hemerocallis* and *Prinos* ; and the neuter gender is restored to *Nama, Pentapetes* and *Phyteuma.*

Several of the above names have usually been given their correct classical gender, e.g. *Cistus, Tragopogon, Erigeron, Croton, Panax, Styrax, Phyteuma. Scorpiurus* and *Tragopogon* will now agree in gender with all modern compounds ending in *-urus* and *-pogon*, e.g. *Cynosurus* and *Andropogon. Croton, Styrax* and *Panax* will retain the gender assigned to them in DC. Prodromus, Engl. Pflanzenreich, and Engl. Pflanzenfamilien, and will also be in conformity with modern compounds based on them, e.g. *Julocroton, Afrostyrax*, and *Nothopanax.*

It seems desirable to give brief notes on the genders of a few Linnean generic names. The Latin word rumex was either masculine or feminine (Kennedy, Revised Latin Primer, 223), and the masc. gender adopted for *Rumex* by Linnaeus is accordingly retained ; atriplex was masc., fem. or neut. in Latin, and therefore remains fem. as in Sp. Pl.; potamogeton was masc. or fem. in Greek, doubtful in Latin, neut. in Sp. Pl.; in accordance with general usage in standard taxonomic works (e.g. Fryer and Bennett, The Potamogetons of the British Isles, Engler's Pflanzenreich), the generic name *Potamogeton* is now treated as masculine.

A word of caution may be required concerning the feminine gender attributed to certain names used in Pliny's Historia Naturalis.

Pliny frequently uses a feminine adjective agreeing with the word "herba" understood. Thus he has "Geranion . . . Similis est cicutae," although he (like all other authors) treats geranion as neuter, as is seen from the phrase "Geranion in vino potum" (Plin. Hist. Nat. ed. Harduin. ii. 407, l.11 ; ii. 415, l.15). On the other hand, the masculine and neuter genders used in Pliny present no difficulty. The phrase "Cissos . . . coxendicibus utilis e vino potus" (Plin. ed. Harduin. ii. 339, l.26) indicates that cissos was masculine in Latin as well as in Greek. M. L. GREEN.

(33) Art. 73. The delay in the publication of the revised International Rules of Botanical Nomenclature as modified at Cambridge (1930) has prevented the working of the organization drawn up at that meeting.

The following suggestions are put forward for consideration at the Amsterdam (1935) Congress :—

1. The same personnel of various Committees should be retained until 1940 so far as possible.

2. That each Committee should elect a Secretary whose name shall be put forward to the Section for approval.

3. That a Secretary shall remain in office until the next International Botanical Congress.

4. That the Secretary of each Sectional Committee shall report matters on which the committee has agreed, to the Secretary of the Executive Committee twelve months before the next Congress. These shall be circulated to the members of the Executive Committee and arranged for consideration at the following Congress.

5. That it is in the best interests of botanical nomenclature that the personnel of the committees should not be permanent ; that there should be regular change of secretaries, and as much change as is expedient in the personnel of the committees.

6. That the Secretary of the Executive Committee elected at one International Botanical Congress shall act as a liaison-officer with the organizers of the next Congress in all matters concerning nomenclature.

7. That at the Amsterdam Congress separate committees be set up.

(a) to draw up regulations for determining types (Appendix I.)

(b) prepare a list of Representative Botanical Institutes (Appendix VII.)

(c) report on the nomenclature of garden plants (Appendix VIII.) and on articles 31–35.

8. That the sectional committees receive the names proposed for the list of :

Nomina conservanda familiarum (Appendix II)
Nomina ambigua (Appendix IV)
Nomina dubia* (Appendix V)
Nomina confusa (Appendix VI)
Nomina generica conservanda (Appendix III)

in their respective groups and later report on these to the Executive Committee.

9. That all lists should be in the hands of the Secretary of the Executive Committee by September 1939 so that Art. 73 (2), (3) and (4) may be properly carried out. J. RAMSBOTTOM.

(34) *General proposal.*—That Rec. XXXIX–XLIV be submitted for revision to a select committee of competent scholar botanists, with a view to giving the sanction of Rules to much of the matter contained in these Recommendations ; and that an addition be made to Art. 70 to the effect that " when an author has not found his name or epithet in accordance with Articles . . . [of these Rules] is must be altered accordingly."

Argument. As the position now stands the original spelling alone is legitimate—for one species *rhynchocarpa*, for another *rynchocarpa*, for one *europaea*, for another *Europaea* (for there is no authority in the Rules for departing from the original spelling of geographical epithets with initial capitals, etc.). The whole position requires standardisation : one should not be expected to memorise such details.

The present prescriptions could be submitted to a select committee of competent scholar botanists. There seems to be no linguistic justification for the use of -ii in the genitive, except when the nominative would be -ius, and the form *Babingtoni* would preserve the correct pronunciation of the name. The whole of these prescriptions require some reconsideration if, as here proposed, part of them be changed into Rules. A. J. WILMOTT.

(35) APPENDIX II. NOMINA FAMILIARUM CONSERVANDA.

List proposed by J. Lanjouw and T. A. Sprague.

Eight very well known names of families of Phanerogamae not ending in the suffix *-aceae* were conserved under the International Rules of Nomenclature, ed. 2 (1912), Art. 22. These were : *Palmae, Gramineae, Cruciferae, Leguminosae, Guttiferae, Umbelliferae, Labiatae, Compositae.* At the Cambridge Congress (1930), it was pointed out that other very widely used names of families could not be maintained unless they were conserved, the name *Scrophulariaceae*, for example, being antedated by *Rhinanthaceae.* The Congress accordingly decided to establish an enlarged list of " Nomina

* No Appendix for *nomina dubia* is recognized in the International Rules, ed. 3.—T.A.S.

conservanda familiarum." The list which follows is submitted for the consideration of the appropriate Committees, and for that of the International Botanical Congress, Amsterdam, 1935.

The list comprises the 185 names of families which are employed both in Bentham and Hooker's Genera Plantarum and in Engler u. Gilg, Syllabus der Pflanzenfamilien, ed. 9, 10 (1924). They are in the form prescribed by Art. 23 of the Rules (ed. 3). The name *Papilionaceae*, which may be used by those who regard that group as constituting an independent family, is also included.

By the method of selection adopted, all personal predilections in favour of a particular system of classification are eliminated. It will doubtless be necessary to add other names, but the present list is put forward as a non-controversial basis on which the complete list may be founded.

It has been necessary to modify the spelling of a few names in order that they may correspond with the correct spelling of the type genera. These cases are discussed in the notes. The name *Balanopsidaceae*—badly formed from *Balanops*—has not been altered, because no satisfactory alternative form has been found. The spelling *Balanopaceae*, suggested in a recent circular by Mr. J. Adams (Ottawa) does not immediately recall the generic name *Balanops*.

Probably many of the names in the list are the correct ones under International Rules. It seems desirable, however, to suggest all of them for conversation, as an investigation into the validity of even 50 names would involve so much time as to be impracticable, since no adequate list exists of the places and dates of publication of family names.

Nomina familiarum conservanda.

Cycadaceae ; Gnetaceae.

Typhaceae ; Pandanaceae ; Najadaceae ; Alismataceae ; Hydrocharitaceae ; Triuridaceae ; Gramineae ;* Cyperaceae ; Palmae ;* Cyclanthaceae ; Araceae ; Lemnaceae ; Flagellariaceae ; Restionaceae ; Centrolepidaceae ; Mayacaceae ; Xyridaceae ; Eriocaulaceae ; Rapateaceae ; Bromeliaceae ; Commelinaceae ; Pontederiaceae ; Philydraceae ; Juncaceae ; Liliaceae ; Haemodoraceae ; Amaryllidaceae ; Taccaceae ; Dioscoreaceae ; Iridaceae ; Burmanniaceae ; Orchidaceae.

Casuarinaceae ; Piperaceae ; Chloranthaceae ; Salicaceae ; Myricaceae ; Balanopsidaceae ; Leitneriaceae ; Juglandaceae ; Batidaceae ; Urticaceae ; Proteaceae ; Santalaceae ; Olacaceae ; Loranthaceae ; Balanophoraceae ; Aristolochiaceae ; Polygonaceae ; Chenopodiaceae; Amaranthaceae (1) ; Nyctaginaceae ; Phytolaccaceae ; Portulacaceae; Caryophyllaceae.

* An alternative name ending in *-aceae* may be used for this family.

Nymphaeaceae ; Ceratophyllaceae ; Ranunculaceae ; Berberidaceae ; Menispermaceae ; Magnoliaceae ; Calycanthaceae ; Annonaceae (2) ; Myristicaceae ; Monimiaceae ; Lauraceae ; Papaveraceae ; Capparidaceae ; Cruciferae ;* Resedaceae ; Moringaceae.

Sarraceniaceae ; Nepenthaceae ; Droseraceae ; Podostemaceae (3) ; Crassulaceae ; Saxifragaceae ; Pittosporaceae ; Bruniaceae ; Hamamelidaceae ; Platanaceae ; Rosaceae ; Connaraceae ; Leguminosae ;* Papilionaceae.†

Geraniaceae ; Linaceae ; Humiriaceae (4) ; Zygophyllaceae ; Rutaceae ; Simaroubaceae ; Burseraceae ; Meliaceae ; Malpighiaceae ; Vochysiaceae ; Tremandraceae ; Polygalaceae ; Euphorbiaceae ; Empetraceae ; Coriariaceae ; Anacardiaceae ; Cyrillaceae ; Celastraceae ; Salvadoraceae ; Stackhousiaceae ; Sapindaceae ; Sabiaceae ; Rhamnaceae ; Chlaenaceae ; Tiliaceae ; Malvaceae ; Sterculiaceae.

Dilleniaceae ; Ochnaceae ; Guttiferae ;* Dipterocarpaceae ; Elatinaceae ; Frankeniaceae ; Tamaricaceae ; Cistaceae ; Bixaceae ; Lacistemaceae ; Canellaceae ; Violaceae ; Turneraceae ; Passifloraceae ; Loasaceae ; Datiscaceae ; Begoniaceae ; Cactaceae ; Penaeaceae ; Thymelaeaceae ; Elaeagnaceae ; Lythraceae ; Rhizophoraceae Combretaceae ; Myrtaceae ; Melastomataceae ; Haloragaceae (5) ; Araliaceae ; Umbelliferae ;* Cornaceae.

Diapensiaceae ; Ericaceae ; Epacridaceae ; Myrsinaceae ; Primulaceae ; Plumbaginaceae ; Sapotaceae ; Ebenaceae ; Styracaceae.

Oleaceae ; Loganiaceae ; Gentianaceae ; Apocynaceae ; Asclepiadaceae ; Convolvulaceae ; Polemoniaceae ; Lennoaceae ; Hydrophyllaceae ; Boraginaceae (6) ; Verbenaceae ; Labiatae ;* Solanaceae ; Scrophulariaceae ; Bignoniaceae ; Pedaliaceae ; Orobanchaceae ; Gesneriaceae ; Columelliaceae ; Lentibulariaceae ; Acanthaceae ; Myoporaceae ; Plantaginaceae.

Rubiaceae ; Caprifoliaceae ; Valerianaceae ; Dipsacaceae ; Cucurbitaceae ; Campanulaceae ; Goodeniaceae ; Stylidiaceae ; Calyceraceae ; Compositae.*

Notes.

(1) *Amaranthaceae.* The name of the type genus is *Amaranthus* L. (1753). This spelling must be retained under International Rules, since it was deliberately adopted by Linnaeus in preference to the classical form *Amarantus* (see Kew Bull. 1928, 287, 343). The family name is therefore *Amaranthaceae* (not *Amarantaceae*).

(2) *Annonaceae.* The name of the type genus is *Annona* L. (1753), which was deliberately adopted by Linnaeus in preference to *Anona*. He rejected the latter on the ground that it was a " barbarous " name, whereas *Annona* was a classical word (see Kew Bull. 1928, 344). The family name is therefore *Annonaceae.*

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* An alternative name ending in *-aceae* may be used for this family.

† If treated as an independent family.

(3) *Podostemaceae.* The name of the type genus is *Podostemum* The family name is therefore *Podostemaceae* (see Kew Bull. 1933, 46.).

(4) *Humiriaceae.* The correct name for the type genus is *Houmiri* Aubl. (1775). The Latinized form *Humiria* Jaume St. Hil. (1805) is so widely employed, however, that it seems desirable to conserve it. Unless this is done, the spelling of the family name will have to be altered.

(5) *Haloragaceae.* The name of the type genus is *Haloragis* (see Kew Bull. 1928, 354). The International Rules prohibit alterations in spelling based solely on philological grounds. The spelling of the family name follows that of the generic one.

(6) *Boraginaceae.* It has been shown that the correct spelling, under International Rules, of the name of the type genus is *Borago* (see Kew Bull. 1928, 288, 348). The name of the family must correspond.

(36) Appendix III. 1. Algae.

List proposed by G. Tandy.

Phaeophyceae.

(Laminariac.) **Agarum** Bory, Dict. Class. Hist. Nat. IX, 193 (1826) (non Link in Schrad. Neues Journ. f. d. Bot. III, 7 (1809)= *Phyllophora* Grev. nom. conserv.)

(Chordariac.) **Chordaria** Ag. Syn. Alg. Scand. XII (1817) emend. (non Link in Schrad. Neues Journ. f. d. Bot. III, 8 (1809)= *Chorda* Stackh.) Standard species : *C. divaricata* Ag.

Link's name was a simple illegitimate change for *Chorda* Stackh. with citation of the same type (*Fucus Filum* Linn.) " melius *Chordaria* vocanda." The recognition of the distinctions between the various species assembled by Agardh under *Chordaria* led to the re-establishment of *Chorda* and the retention of *Chordaria* for some of the remainder. In the restricted sense it has been in use for over 100 years without challenge.

(Elachistac.) **Elachista** (" Elachistea ") Duby, Bot. Gall. 972 (1830). This is a mere regularization of an item in the accepted list. In the third edition of the International Rules (p. 86) the spelling is " Elachista Duby, Mem. Ceram. I (1832) p. 19." In the place cited the spelling is Elachistea and there is reference to Bot. Gall. where the spelling is the same. Of the two forms Elachistea has been very little used.

(Dictyotac.) **Zonaria** Ag. Syn. Alg. Scand. XX (1817) emend. sensu J. Ag. in Linnaea XV, 445 (1841).

Standard species : *Z. variegata* (Lamour.) Ag.

Nomen rejiciendum : *Villania* Nieuwl. in Amer. Midl. Naturalist V, 51 (1917).

Zonaria was originally an illegitimate change for *Dictyota* Lamour. There remains some doubt whether *Dictyota* is itself

legal but *Zonaria* certainly is not and its ascription to Draparn. is unsupported by any other publication. As emended it has, nevertheless, been used almost exclusively and was not challenged until 1917.

Rhodophyceae.

(Helminthocladiac.) **Helminthocladia** J. Ag. Spec. Gen. & Ord. Alg. II, 412 (1852) (non Harv. Genera S. Afr. Pl. 396 (1838).). This is one of the changes necessitated by the changing of the homonym rule in 1930. J. Agardh thought that the relegation to synonymy of Harvey's name allowed him to use it again in a different sense.

Appendix III. 2. Phanerogamae.

(37). List proposed by J. E. Dandy.

The generic names listed below are proposed for addition to Appendix III (Nomina generica conservanda). These names are all in current use for genera of *Phanerogamae*, and with one notable exception (n. 1032 *Laxmannia*) have been generally adopted in important botanical works. *Laxmannia* has been passing under two names, both illegitimate, and it is therefore thought advisable to conserve one of them.

For convenience the names are grouped in two sections: (a) names invalidated by earlier synonyms, and (b) names invalidated by earlier homonyms.

(a) Names Invalidated by Earlier Synonyms.

57 (Potamog.) **Posidonia** Konig in Konig & Sims, Ann. Bot. ii. 95, t. 6 (1805). Type-species: *P. Caulini* Konig.

Nomen rejiciendum: *Alga* Boehm. in Ludw. Defin. Gen. Pl., Ed. Boehm. 503 (1760).

A well-known genus of marine phanerogams, with 2 species. If *Posidonia* is not conserved the genus will have to be called *Alga*; this, for obvious reasons, is highly undesirable. *Posidonia* is the type-genus of the tribe *Posidonieae* and of the family *Posidoniaceae* which is recognised by some authors.

512 (Cyper.) **Eriospora** Hochst. ex A. Rich. Tent. Fl. Abyssin. ii. 508 (1851). Type-species: *E. abyssinica* Hochst. ex A. Rich.

Nomen rejiciendum: *Catagyna* Beauv. ex Lestib. Ess. Fam. Cypér. 26 (1819).

A genus of 4 or 5 species in Africa.

808 (Restion.) **Leptocarpus** R. Br. Prodr. Fl. Nov. Holland, i. 250 (1810). Standard-species: *L. aristatus* R. Br.

Nomen rejiciendum: *Schoenodum* Labill. Nov. Holland. Pl. Specim. ii. 79 (1805); emend. Kunth, Enum. Pl. iii. 445 (1841).

This is a genus of about 12 species in Australasia, Chile, and south-eastern Asia. *Schoenodum* was based on a single taxonomic species, *S. tenax* Labill., which according to R. Brown (*tom. cit.* 248 sub *Lyginia*) is a mixture of two species belonging to different Restionaceous genera. Brown therefore rejected the name *Schoenodum*, referring the male *S. tenax* to *Lyginia imberbis* R. Br. and the female to *Leptocarpus tenax* (Labill.) R. Br., for which species he retained Labillardiere's specific epithet. *Schoenodum* was subsequently emended by Kunth (*loc. cit.*) and was adopted by C. Gay (Hist. Chil., Bot. vi. 152 (1853)) in the sense of *Leptocarpus*. It may be argued that *Schoenodum* can be rejected as a *nomen confusum* under Art. 64, but this is open to doubt since the name was based on two Restionaceous plants which, though now referred to different genera, can scarcely be described as entirely discordant elements. In any event it is as simple to add *Leptocarpus* to the list of *nomina generica conservanda* as to add *Schoenodum* to the list of *nomina confusa* (Appendix V).

894 (Commelin.) **Palisota** Reichb. [Consp. Reg. Veg. 59 (1828), *nomen nudum*] ex Endl. Gen. Pl. 125 in obs. (1836). Type-species : *P. ambigua* (Beauv.) C. B. Clarke (*Commelina ambigua* Beauv.).

Nomen rejiciendum : *Duchekia* Kostel. Allgem. Med.-pharm. Fl. i. 213 (1831).

A genus of about 25 species in tropical Africa.

1324 (Zingib.) **Zingiber** Boehm. in Ludw. Defin. Gen. Pl., Ed. Boehm. 89 (1760). Standard-species : *Z. officinale* Rosc. (*Amomum Zingiber* L.).

Nomen rejiciendum : *Zinziber* Mill. Gard. Dict. Abridg., Ed. 4, iii (1754).

A large and important genus with more than 80 species in the warmer parts of Asia and Australia. *Zingiber officinale* (common ginger) is widely cultivated. *Zingiber* is the type-genus of the family *Zingiberaceae*, the subfamily *Zingiberoideae*, and the tribe *Zingibereae*.

1408 (Orchid.) **Holothrix** Rich. [in Mém. Mus. Hist. Nat. iv. 55 in obs. (1818), *nomen nudum*] ex Lindl. Gen. & Sp. Orchid. Pl. 257, 283 (1835). Type-species : *H. hispidula* (L. f.) Dur. & Schinz (*Orchis hispidula* L. f.).

Nomina rejicienda : *Tryphia* Lindl. [in Edw. Bot. Reg. xx. sub t. 1701 (1834), *nomen nudum*] Gen. & Sp. Orchid. Pl. 258, 333 (1835). *Scopularia* Lindl. in Edw. Bot. Reg. xx. sub t.1701 (1834). *Monotris* Lindl. *loc. cit.* *Saccidium* Lindl. Gen. & Sp. Orchid. Pl. 258, 301 (1835).

A genus with a large number of species in tropical and South Africa.

1488 (Orchid.) **Pelexia** Poit. ex [Rich. in Mém. Mus. Hist. Nat. iv. 59 (1818), *nomen nudum*] Lindl. in Edw. Bot. Reg. xii. sub t.

985 (1826). Type-species : *P. adnata* (Sw.) Spreng. (*Neottia adnata* (Sw.) Sw.).

Nomen rejiciendum : *Collea* Lindl. in Edw. Bot. Reg. ix. sub t. 760 in obs. (1823).

A genus with about 10 species in tropical America.

1500 (Orchid.) **Anoectochilus** Bl. Fl. Jav. praef. p. vi, in adnot. (1828). Type-species : *A. setaceus* (Bl.) Lindl. (*Anecochilus setaceus* Bl.).

Nomina rejicienda : *Anecochilus* Bl. Bijdr. Fl. Nederl. Ind. 411 (1825). *Chrysobaphus* Wall. Tent. Fl. Napal. Illustr. 37 (1826).

A genus of about 25 species in Indo-Malaya. The name *Anoectochilus* was substituted by Blume for his earlier *Anecochilus*, and has been generally adopted.

1704 (Orchid.) **Cirrhopetalum** Lindl. [in Edw. Bot. Reg. x. sub t. 832 (1824), *nomen nudum*] Gen. & Sp. Orchid. Pl. 58 (1830). Type-species : *C. Thouarsii* Lindl. (*Bulbophyllum longiflorum* Thou.).

Nomina rejicienda : *Zygoglossum* Reinw. [ex Bl. Cat. Gewass. Lands Plantent. Buitenz. 100 (1823), *nomen nudum*] apud Hornsch. in Syll. Pl. Nov. ii. 4 (1828). *Ephippium* Bl. Bijdr. Fl. Nederl. Ind. 308 (1825). *Hippoglossum* Breda, Gen. & Sp. Orchid. (1827).

A genus with a large number of species in Indo-Malaya, Australia, and the Mascarene Islands.

1714 (Orchid.) **Panisea** (Lindl.) Lindl. Fol. Orchid. (1854). Type-species : *P. parviflora* (Lindl.) Lindl. (*Coelogyne parviflora* Lindl.).

Nomen rejiciendum : *Androgyne* Griff. Notul. Pl. As. iii. 279 (1851).

A genus of about 4 species in India. The generic name *Panisea* was based on *Coelogyne* sect. *Panisea* Lindl., Gen. & Sp. Orchid. Pl. 44 (1830).

1778 (Orchid.) **Miltonia** Lindl. in Edw. Bot. Reg. xxiii. sub t. 1976 in obs. (1837). Type-species : *M. spectabilis* Lindl.

Nomen rejiciendum : *Gynizodon* Raf. Fl. Tellur. iv. 40 (1836).

A genus of 20 or more species in tropical America, some of which are in cultivation.

4627 (Celastr.) **Gymnosporia** (Wight & Arn.) Benth. & Hook. f. Gen. Pl. i. 365 (1862). Standard-species : *G. montana* (Roxb.) Benth. (*Celastrus montanus* Roxb.).

Nomina rejicienda : *Burglaria* Wendl. ex Steud. Nomencl. Bot. 129 (1821), *nomen nudum*. *Scytophyllum* Eckl. & Zeyh. Enum. Pl. 124 (1835). *Encentrus* C. Presl in Abhandl. Böhm. Gesellsch. Wissensch., Folg. 5, iii. 463 (1844). *Polyacanthus* C. Presl, *loc. cit.*

This genus includes a large number of species in the warmer parts of the World. The generic name *Gymnosporia* was based by Bentham and Hooker on *Celastrus* sect. *Gymnosporia* Wight & Arn. Prodr. Fl. Penins. Ind. Or. i. 159 (1834).

462 (Cyper.) **Kyllinga** Rottb. Descr. & Icon. Pl. 12 (1773)—non *Killinga* Adans. Fam. Pl. ii. 498, 539 (1763). Standard-species : *Kyllinga monocephala* Rottb.

Nomen rejiciendum : *Thryocephalon* J. R. & G. Forst. Charact. Gen. Pl. 129, t. 65 (1776).

This is a genus with a large number of species in tropical and subtropical regions.

974 (Liliac.) **Anguillaria** R. Br. Prodr. Fl. Nov. Holland. i. 273 (1810)—non Gaertn. Fruct. & Semin. Pl. i. 372 (1788). Standard-species : *A. dioica* R. Br.

An Australian genus of about 3 species, for which no other name has been proposed. *Anguillaria* R. Br. is the type-genus of the tribe *Anguillarieae*.

1032 (Liliac.) **Laxmannia** R. Br. Prodr. Fl. Nov. Holland. i. 285 (1810)—non J. R. & G. Forst. Charact. Gen. Pl. 93, t. 47 (1776), nec Schreb. in L. Gen. Pl., Ed. 8, ii. 800 (1791). Standard-species : *L. gracilis* R. Br.

Nomen rejiciendum : *Bartlingia* F. Muell. [ex Benth. Fl. Austral. vii. 63 in obs. (1878), *nomen synonymum*] in Journ. & Proc. R. Soc. New S. Wales xv. 232 (1882)—non Reichb. in Flora vii. 241 (1824), nec Brongn. in Ann. Sci. Nat. x. 373 in adnot. 2 (1827).

A genus of about 8 species in Australia. There has been no agreement about the name of this genus, some using *Laxmannia* R. Br., others *Bartlingia* F. Muell., neither of which is legitimate. It is proposed to settle the point by conserving *Laxmannia*, the first name. *Laxmannia* was adopted by Bentham, Fl. Austral. vii. 63 (1878), by Bentham & Hooker, Gen. Pl. iii. 796 (1883), and by Engler in Engl. & Prantl. Nat. Pflanzenfam. ii, 5. 48 (1888). *Bartlingia* was adopted by K. Krause in Engl. & Prantl. *op. cit.*, Ed. 2, xv. a. 308 (1930).

1037 (Liliac.) **Johnsonia** R. Br. Prodr. Fl. Nov. Holland. i. 287 (1810)—non Dale ex Mill. Gard. Dict. Abridg., Ed. 4, ii (1754), nec Adans. Fam. Pl. ii 343 (1763). Type-species : *J. lupulina* R. Br.

An Australian genus of 3 species, for which no other name has been proposed. *Johnsonia* R. Br. is the type-genus of the tribe *Johnsonieae*.

1617 (Orchid.) **Laelia** Lindl. Gen. & Sp. Orchid. Pl. 96, 115 (1831)—non Adans. Fam. Pl. ii. 423 (1763). Standard-species *L. grandiflora* (Llave & Lexarza) Lindl.

Nomen rejiciendum : *Amalia* Reichb. Deutsch. Bot. i. 52 (1841).

A genus with numerous species in tropical America, some of which are well-known in cultivation and have hybridized freely with *Cattleya*.

2068 (Prot.) **Banksia** L. f. Suppl. Pl. 15, 126 (1781)—non J. R. & G. Forst. Charact. Gen. Pl. 7, t. 4 (1776). Standard-species : *B. integrifolia* L. f.

Nomen rejiciendum : *Sirmuellera* Kuntze, Revis. Gen. Pl. ii. 581 (1891).

An important genus of about 50 species in Australia. *Banksia* L. f. is the type-genus of the tribe *Banksieae.*

Banksia J. R. & G. Forst. is the oldest name for a large genus of *Thymelaeaceae* for which the name *Pimelea* Banks ex Gaertn. (1788) is already conserved. Conservation of *Banksia* L. f. for the Proteaceous genus would render the conservation of *Pimelea* unnecessary.

3182 (Saxifrag.) **Bergenia** Moench, Meth. Pl. 664 (1794)— non *Bergena* Adans. Fam. Pl. ii. 345 (1763). Type-species : *Bergenia bifolia* Moench.

Nomen rejiciendum : *Geryonia* Schrank in Flora i. 230 (1818).

A genus of about 8 species in central and eastern Asia. Some of the species are well-known in cultivation and have been considerably hybridized.

3185 (Saxifrag.) **Boykinia** Nutt. in Journ. Acad. Nat. Sci. Philad. vii. 113 (1834)—non Raf. (1817). Type-species : *B. aconitifolia* Nutt.

Nomina rejicienda : *Telesonix* Raf. Fl. Tellur. ii. 69 (1836). *Therofon* Raf. New Fl. & Bot. N. Amer. iv. 66 (1836).

A genus of about 9 species in North America and Japan.

3204 (Saxifrag.; jam Stylid.) **Donatia** J. R. & G. Forst. Charact. Gen. Pl. 9, t. 5 (1776) -non Loefl. Iter Hispan. 193 (1758). Type-species : *D. fascicularis* J. R. & G. Forst.

Nomen rejiciendum : *Orites* Banks & Soland. ex Hook. f. Bot. Antarct. Voy. I. ii. 282 (1846), *nomen synonymum.*

This is a genus of 2 species in temperate South America, New Zealand and Tasmania. It has no legitimate name, for *Orites* has been published only in synonymy. *Donatia* J. R. & G. Forst. is the type-genus of the sub-family *Donatioideae* of *Stylidiaceae.*

4957 (Tiliac.) **Sparmannia** (*Sparrmannia*) L. f. Suppl. Pl. 41, 265, 468 (1781)—non Buc'hoz, Pl. Nouvellem. Découv. 3 (1779). Type-species : *S. africana* L. f.

An African genus of 3 5 or more species, for which no other name has been proposed. *S. africana* is well-known in cultivation. The spelling *Sparmannia* is proposed for conservation since it has been consistently in use, although the name was spelt *Sparrmannia* by Linn. f.

Rehmannia Libosch. ex Fisch. & Mey. (1835) is conserved against *Sparmannia* Buc'hoz for a genus of *Scrophulariaceae.* Conservation of *Sparmannia* L. f. for the Tiliaceous genus would render the conservation of *Rehmannia* unnecessary.

8887 (*Compos.*) **Amellus** L. Syst. Nat., Ed. 10, ii. 1225 (1759) —non P. Browne, Civ. & Nat. Hist. Jamaic. 317 (1756). Standard-species : *A. lychnites* L.

Nomen rejiciendum : *Haenelia* Walp. Repert. Bot. Syst. ii. 974 (1843).

This is a genus of 9 or 10 species in South Africa.

Amellus P. Browne is congeneric with *Melanthera* Rohr (1792), a name in general use for an important genus of African and American *Compositae*. Conservation of *Amellus* L. would therefore also ensure the conservation of *Melanthera* and obviate the confusion which would arise from the transfer of the name *Amellus* from one genus of *Compositae* to another.

(38) Name proposed by A. W. Exell.

3106 (Capparidaceae) **Boscia** Lam. in Encyc. Méth. Illustr. Genr.: t. 395 (1797)— non Thunb., Prod. Pl. Cap.: [x] et 32 (1794). Type-species : *Boscia senegalensis* (Pers.) Lam. ex Poir.

Nomen rejiciendum : *Podoria* Pers., Syn. ii : 5 (1806).

A well-known genus with numerous species in Tropical and South Africa.

(39) Name proposed by M. L. Fernald.

957 **Stenanthium** (A. Gray) Kunth, Enum. iv. 189 (1843) ; based on *Veratrum*, 2 subgen. *Stenanthium* A. Gray, Ann. Lyc. N.Y. iv. 119 (1837). Standard-species : *S. angustifolium* (Pursh) Kunth.

Nomen rejiciendum : *Anepsa* Raf. Fl. Tellur. pt. iv. 27 (1836–38).

Stenanthium was fully characterized by Kunth (1843) and has been consistently used by all authors since, even by Britton, Small and others who hold to strict priority. It is a genus of several species of America and Asia.

Anepsa Raf. (1836–38) has never been taken up, although it has clear priority. Its publication was characteristically trivial, though it meets technical requirements : " his [Gray's] *Stenanthium* S. G. of Veratrum is my G. *Anepsa*."

The rejection of *Stenanthium* would cause serious inconvenience and discredit careful publication ; the taking up of *Anepsa* would cause equal inconvenience and several new combinations ; it would also mean the acceptance of slipshod publication.

(40) Name proposed by T. A. Sprague.

3953 **Humiria** Jaume St. Hil. Expos. II (1805) 374. Standard-species : **Humiria balsamifera** (Aubl.) Jaume St. Hil.

Nomen rejiciendum : *Houmiri* Aubl. Hist. Pl. Guiane Franç. I (1775) 564, t. 225.

The original spelling of this generic name is *Houmiri* Aubl. The Latinized form *Humiria* is so widely employed that this spelling is here put forward for conservation. Unless this is done the accepted form of the family name, namely, *Humiriaceae*, will have to be changed.

Appendix III : Supplementum.

Nomina generica homonyma conservanda.

A paper is being prepared by A. Rehder (Arnold Arboretum), R. Mansfeld (Berlin), T. A. Sprague (Kew) and M. L. Green (Kew), for presentation to the Amsterdam Congress.

Appendix VI. Representative Botanical Institutions Recognized under Art. 36.

(41) List proposed by T. A. Sprague and M. L. Green.

Under Art. 36, publication may be effected by distribution of printed matter or " indelible autographs " to specified representative botanical institutions. A provisional list of such institutions, arranged in twenty *geographical* areas, is submitted for consideration. It is suggested that, *in the future* (starting from January 1st, 1936), in order to secure publication in this special way, at least twenty copies should be distributed, one to a recognized institution in each geographical area. Each isolated case of "distribution among representative institutions " that has occurred in the past, should be considered on its own merits.

This list has been prepared merely as a basis for discussion by the Executive Committee or by such special Committee as may be appointed for the purpose.

Appendix VI.

1. *Europe.*

(1) Austria and Hungary. Naturhist. Mus., *Wien* ; Bot. Inst., Univ., *Wien* ; Magyar Kir. Nemzeti Mus., *Budapest.*

(2) Czechoslovakia and Poland. Bot. Inst., Charles Univ., *Praha* ; Bot. Inst., Deutsch. Univ., *Praha* ; Bot. Inst., Univ., *Kraków* ; Bot. Inst., Univ., *Warszawa.*

(3) France. Mus. Nat. Hist., *Paris.*

(4) Germany. Bot. Mus., *Berlin-Dahlem.*

(5) Great Britain. Roy. Bot. Gard., *Kew* ; Brit. Mus. (Nat. Hist.), *London.*

(6) Italy. Mus. Bot., Univ., *Firenze* ; Ist. Bot., Univ., *Roma.*

(7) Netherlands and Belgium. Rijks Herb., *Leiden* ; Bot. Mus. en Herb., Rijks Univ., *Utrecht* ; Jard. Bot., *Bruxelles*

(8) Scandinavia and Denmark. Naturhist. Riksmus., *Stockholm* ; Library, Univ., *Uppsala* ; Bot. Mus., Univ., *Oslo* ; Bot. Mus., Univ., *Copenhagen.*

(9) Spain and Portugal. Jard. Bot., *Madrid* ; Mus. Ci. Nat., *Barcelona* : Jard. Bot., *Coimbra.*

(10) Switzerland. Conserv. Bot., *Genève* ; Bot. Mus., Univ., *Zürich.*

(11) U.S.S.R. Jard. Bot., *Leningrad* ; Herb., Univ., *Moskau.*

II. *Africa.*

(12) South Africa. Bolus Herb., *Cape Town*; Dept. Agric., *Pretoria.*

III. *Asia.*

(13) India and Malaya. Bot. Gard., *Calcutta*; Bot. Gard., *Singapore*; Bot. Gard., *Buitenzorg*; Bureau of Science, *Manila.*

(14) China. Metrop. Mus. Nat. Hist., *Nanking.*

(15) Japan. Imperial University, *Tokyo.*

IV. *Australasia.*

(16) Australia. Nat. Herb., *Melbourne*; Nat. Herb. N. S. Wales, *Sydney.*

(17) New Zealand. Dominion Museum, *Wellington.*

V. *America.*

(18) Canada. Nat. Herb., *Ottawa.*

(19) United States. Gray Herb., *Cambridge* (*Mass.*); New York Botanical Garden; U.S. Nat. Mus., *Washington.*

(20) West Indies and South America. Bot. Gard., *Trinidad*; Jard. Bot., *Rio de Janeiro*; Mus. Nac. Hist. Nat., *Buenos Aires*; Mus. Nac., *Montevideo*; Mus. Nac., *Santiago de Chile.*

(42) Appendix "IX."

Works treated, under proposal no. (3), as not validly published.

List proposed by A. J. Wilmott.

Section 1: Works not employing the Linnean biverbal nomenclature for species.

Arduino, P.; 1759: Animadvers. bot. specimen.
(Note: The "specimen alterum" (1763) contained biverbal nomenclature for species.)

Browne, P.: 1756: Hist. Jamaica.
1789: Hist. Jamaica, ed. 2.

Buchoz, P. J.: 1770: Traité . . . Plant. Lorr. & les trois Evêches (11 vols.)

Fabricius, P. C.: 1759 Enum. Plant. Hort. Helmstad.
1763: ,, ,, ,, ,, ed. 2.
1776: ,, ,, ,, ,, ed. 3. (posthum.)

Garsault, F. A. de: 1764: Les figures des Plantes et anim. . . . Mat. Med.
1765: Explication abrégé de sept cents dix-neuf plantes.
1767: Descr. . . . des plantes. (4 vols.)

Gérard, L.; 1761: Flora Gallo-provincialis.

Gmelin, S. G.; 1768–9: Flora Sibirica vols. III & IV.

Haller, A. von; 1768: Hist. Stirp. Helv., ed. 2.

Hill, J.; 1760: Flora Britannica.
1755: The Useful Family Herbal.
1756: The British Herbal.

Miller, P.; 1754 : Abridgement of the Gardeners Dictionary, ed.4.
? ? ed. 5, non vidi
1758 : The Gardeners Dictionary, ed. 7.
Schmidel, C. C.; 1762 : Icones Plantarum
1793 : ,, ,, ed. 2.
Scopoli, J. A.; 1760 : Flora Carniolica.
Seguier, J. F.; 1754 : Pl. Veron., Suppl.
Zinn, J. G.; 1757 : Cat. plant. hort. acad. et agri Gottingensis.

The authors of the publications listed above either wrote no further botanical works or themselves entirely rejected the nomenclature of these earlier works in their later ones. Those who did not accept the Linnean nomenclature were elderly men like Haller, or outstanding botanists who had themselves formulated a classification of plants on different lines, e.g. Gleditsch (mentioned under " dubia " below).

Section 2. Works containing generic names only, but these generic names in accordance with those of works listed in section 1, i.e. not Linnean nomenclature but that of " multiverbalist " authors.
Boehmer, G. R.; 1760 : in Ludwig, C. G., Definitiones Generum Plantarum.
Ludwig, C. G.; 1757 : Inst. Hist. Phys. Reg. Veg., ed. 2.
Mitchell, J.; 1769 : Dissert. Bot. et Zoolog.—ii pp. 21—Plant. genera . . . in Virginia observata.
(N.B. see p. 46 : the completion of part ii is dated 11th March, 1741.)

Section 3.
Work containing univerbal nomenclature for species.
Ehrhart, F.; 1780 : Phytophylacion.

Section 4.
To be rejected to prevent the invalidation of well established names.
Gandoger, M.; 1883–1891 : Flora Europae, 27 vols. (in 13).
This nomenclature might perhaps be regarded as contrary to Art. 28 sentence 4, but it is preferable to include the work here. If these names are not invalidated they are likely to necessitate the rejection of a large and increasing number of names by Art. 61 (later homonyms).
Adanson, M.; 1763 : Families des Plantes (2 vols.). The names now in use which were taken from this work were adopted by Gaertner, Willdenow, De Candolle and others just as Linnaeus adopted names from Tournefort : they would rarely be lost if this work was rejected. There are, however, many names not yet taken up which will necessitate much

change or conservation if the work is not rejected. It certainly was not intended to be part of the Linnean nomenclature (see vol. 1).

" DUBIA ": Inclusion or otherwise requiring discussion.

GLEDITSCH, J. G.: possibly all botanical works. Some of this author's works are non-Linnean, but others cite Linnean specific names. The citation of these is, however, often merely in chronological order in synonymy, and his last work has certainly multiverbal nomenclature for species.

Section 5. Miscellaneous.

NECKER, N. J. de ;1790 : Elementa Botanica (4 vols.) The names of this author which have been used as if they were names of genera are, however, names of his " species naturales " (see p.4), and not of his genera (see p. xxiii). Although this makes them illegitimate under the Rules, it would be better to include in the Appendix such works concerning which there would otherwise be much argument.

Note. It might be well to list here also works known to have been unpublished. Although the names contained are illegitimate there is nothing to indicate to a nomenclator that the work was never published, and confusion may result therefrom. Only works important as affecting nomenclature should be listed.

It might also be well to include a section in which were listed any works which are important in nomenclature but which are so scarce that :

(a) the names contained in them were long overlooked and caused much change in nomenclature when discovered, and at the same time are still so scarce that

(b) they are in fact not available for consultation by any but a very few nomenclators.

VI—NEW OR LITTLE KNOWN PLANTS FROM SOUTH INDIA : V.*

Impatiens anaimudica *C. E. C. Fischer*, sp. nov. [Balsaminaceae] ; *I. travancoricae* Bedd. proxima, sed omnibus partibus major, et foliis haud confertis, nervis numerosioribus, ciliis marginalibus e dentibus (nec e sinubus) ortis, sepalis lateralibus 5–7-nervis, alis sanguineis lobis rotundatis, calcari minore, seminibus multo majoribus differt.

An unbranched or slightly branched *herb*. *Stems* erect or prostrate, rooting and branching at the nodes, 15–25 cm. high, reddish, lenticelled, younger parts crispately hairy. *Leaves* alternate, early deciduous from the lower parts of the stem, more persistent towards the apex but not crowded, membranous, broadly ovate to subcircular, acute, base subtruncate, rounded or shortly cuneate, 2–6·3 cm. long, 1·4–4·2 cm. wide, primary nerves 5–7 pairs, evenly

* Continued from Kew Bulletin, 394, 1934.

arched, copiously set with short, linear, nearly horizontal cystoliths, upper surface glabrous or with scattered hairs on the nerves, pale and with scattered, often crisped hairs on the nerves below, margins evenly crenate, nearly entire at the base, the teeth apiculate or ciliate ; petioles 1–4 cm. long, glabrous or sparsely hairy. *Inflorescence* axillary, shorter than the leaves ; peduncles capillary 2·2–4·5 cm. long, sparsely hairy near the base ; bracts lanceolate, acuminate, 2-3 mm. long. *Flowers* 3–4, subumbellate ; pedicels capillary, 7–10 mm. long, glabrous. *Lateral sepals* ovate, slightly unsymmetric, cuspidate, 6 mm. long, 5-7-nerved, finely streaked with crimson on a lighter background. *Lip* oblong-ovate, deeply concave, cuspidate, 1–1·2 cm. long, with a very small rounded boss-like spur at the base, light-brownish-crimson, spur and cusp darker. *Wing petals* 1·4 cm. long, dull-crimson, drying with a bluish tinge, apical lobe semiobovate, rounded, basal lobe, oblong-lanceolate rounded, 3 mm. long. *Standard* ovate-oblong, cuspidate, 8 mm. long, coloured like the lateral sepals. *Capsule* ellipsoid, cuspidate-acuminate, 6–7 mm. long, glabrous. *Seeds* few, often solitary, subglobose, 3–4 mm. long, dotted with tufts of white or brownish papillae.

TRAVANCORE : Anaimudi Ridge, 8000 ft., fls. and frt. September, *E. Barnes* 582 (type, in Kew Herb.) 579, 580, 581, 583, 811. " A few plants were still flowering in December. Even in September it does not flower very freely."

The figure of *I. travancorica* Bedd. in Ic. Pl. Ind. Or. 1, t. 143 is not very good ; it does not agree in all points with the description (l.c. 29) or with the solitary specimen (presumably the type) in the Kew Herb. In the latter the inflorescences clearly overtop the leaves and are about twice as long as the leaves and petioles together ; the marginal ciliae come very distinctly from the sinus and not from the teeth of the crenatures as shown in the figure ; the dried petals have a distinct purple-pinkish tinge.

Lagenandra ovata *Thw.* and **L. toxicaria** *Dalz.* [Araceae-Aroideae].

The first named combination is based on *Arum ovatum* Linn. Sp. Pl. ed 1, 967 (1753). Linneus' description was confined to 3 words ; " acaule, foliis ovato-oblongis," but he cited in synonymy Rheede Hort. Malab. **11**, 45, t. 23 (1642), where there is a good description and figure under the vernacular name *karinpola*. Schott in Melet. Bot. 16 (1832) transferred the species to the genus *Cryptocoryne*.

Dalziel in Hook. Kew Jour. Bot. 4, 289 (1852) described a new genus *Lagenandra* for a Konkan plant which he named *L. toxicaria* of which a good figure was published as plate 4 in vol. 5 of the same journal.

Schott in Syn. Aroid. 3 (1856) appears to have been the first to consider the two species as identical and united them under the

name *L. toxicaria* Dalz. This opinion was shared by Thwaites, who, however, altered the name (correctly under that conception) to *L. ovata* in his Enum. Pl. Zeyl. 334 (1864). The identity of the two species has been accepted by all subsequent authors, including myself in Fl. Pres. Madras, 1576 (1931).

Professor E. Barnes has recently sent to Kew excellent specimens from Travancore which necessitated a reconsideration of the case and show that the two species are distinct. This opinion is supported by a comparison of the Rheede and Dalziel figures quoted above. The vegetative parts of the two species are very similar, but all the parts are larger in *L. ovata*. The striking differences lie in the spathes. An examination of the sheet of *Arum ovatum* in the Linnean Herbarium has left me in some doubt as to its identity. The specimen has only a small remnant of the base of the spathe and so does not offer much scope for critical determination. My impression, however, is that the plant is identical with Dalziel's. Nevertheless, the specific name *ovata* must be coupled with the description and figure in Rheede Hort. Malab. I strongly suspect that Dalziel himself confused at least the vegetative parts of the two species (they were found together by Barnes), since he states that the leaf has a " stout petiole two feet long ", whereas the longest measured by Professor Barnes was 12 inches long and the longest in Dalziel's specimen (presumably the type) in the Kew Herbarium is only 7 in. long.

The two may be distinguished by the following characters :— (The measurements, unless otherwise stated, are taken from all the specimens now at Kew quoted below).

Cataphylls 15–33 cm. long. *Leaves* oblong, acuminate, 16–38 cm. long, 4·4–13 cm. wide ; petioles 13–47 cm. long (up to 84 cm. *fide* Barnes). *Peduncles* 12–21 cm. long. *Spathes* narrowly turbinate, 6–11 cm. long (5–25 cm. *fide* Barnes), strongly contorted upwards and tapering into a subulate tail 3·5–4·5 cm. long, dark-purple, smooth below, warted or rugose above . . . *ovata.*

Cataphylls 5·8–13 cm. long. *Leaves* elliptic- to ovate-lanceolate, acute or subacute, 11–21 cm. long, 4–9 cm. wide ; petioles. 6–17 cm. long (up to 30 cm. fide Barnes). *Peduncles* 3–5·5 mm. long. *Spathes* cylindric-oblong, usually slightly constricted above the chamber, 4–5·7 cm. long, 1·5–2 cm. diameter, abruptly narrowed into a slender, openly S-curved tail 8·5–13 cm. long, 1·3–2 mm. diameter, flesh-coloured or brownish-buff with five longitudinal purple stripes below, quite smooth or sometimes very slightly warted and finely hispidulous above, not contorted . . . . *toxicaria.*

Professor Barnes has supplied the following descriptive notes on both species ;

Lagenandra ovata Thw.

" *Leaves* up to 49 in. long (blade 17, petiole 32). *Stipular sheaths* (*cataphylls*) up to 13½ in. long, 2-keeled. *Spathe* 10×2 in. *Limb* : lower part ovate with an arc-shaped crack or seam which apparently

does not open, upper part twisted like a ram's horn and with the crack open. The whole spathe very dark-purple, practically black in some specimens ; lower part smooth, with a sticky lustre, upper part warty. Inside surface dull-black and finely transversely puckered ; at the bottom, round the mouth of the passage to the lower chamber is a dome covered with purple and white mossy processes. Internal surface of the chamber dark-purple with numerous longitudinal ridges. *Male flowers* consist of two stamens (loculi?), each truncate with a fine central point. Below the male flowers a number of neuters consisting of white double processes ending in a fine point—these are undeveloped males. Bare part of the spadix white spotted with purple, tapering down to a very slender rod. *Ovaries* in a spherical mass, closely packed at the bottom of the chamber. The whole exposed surface of the ovary appears to be the stigma. Ovaries yellow with a red flush, the top of the mass of ovaries round the spadix is sunk and carries a number of rounded white bodies ; these appear to be undeveloped ovaries. *Inflorescence* with an unpleasant smell. The purple pigment of the spathe is soluble in alcohol and dilute formalin imparting a fine purple colour to them. *Syncarp* spherical, about $1\frac{1}{2}$ inches in diameter. *Peduncle* strongly deflexed. Exposed end of each berry dirty light green, very obtusely conical with irregular radiating ridges ; sides thin and translucent. Three syncarps had 102, 114 and 118 berries ; the berries mostly 1-seeded, a few 2-seeded and about 25% empty. *Seeds* ovoid, about $\frac{1}{4} \times \frac{1}{8}$ in., dark purple with about 25 deep longitudinal furrows, tip blunt-pointed, base slightly flattened. Of 56 inflorescences 40 had the arc-shaped crack convex to the right and the twist of the limb in a left-handed screw; the rest were reversed. Growing in marsh at Tenmalai, Travancore, about 1000 ft. Dec. 1933, *E. Barnes* 644, 647, 654."

Kew specimens : Travancore : Quilon, *Wight* 2770 and in Wall. Cat. 8966B ; Pallode, in evergreen forest of low country, frt. Feb., *M. Rama Rao* 816 ; Alleppi, fls. Nov., *A. Meebold* 12802 ; without precise locality, *C. C. Calder* and *M. S. Ramaswami* 1546. Coorg, *Heyne* in Wall. Cat. 8966A. Cochin : Perambicolam, young frt. Nov., *A. Meebold* 12423. Coimbatore-Cochin frontier at Palakadavu, 1700 ft. April, *C. E. C. Fischer* 3365.

Lagenandra toxicaria Dalz.

"*Rhizome* up to 0·95 in. diameter, green, roots orange-red. *Stipular sheaths* up to $5\frac{1}{2}$ in. long, 2-keeled. *Leaves* ; blades $7\frac{1}{2}$–$8\frac{1}{2} \times 3\frac{1}{4}$–$3\frac{1}{2}$ in., edges frilled ; petioles up to 12 in. long, cylindrical somewhat flattened on front. *Peduncles* 2 in. $\times$ $\frac{1}{3}$ in., flattened. *Spathe* flesh-coloured to brownish-buff outside with a number of faint purple longitudinal striations on the lower half ; long tail curved to a very open " S " and up to $4\frac{1}{2}$ in. long. Opening of limb in the form of an arc. Inside surface of limb of spathe rich-purple, covered with numerous transverse ridges fringed with mossy growth, white at the tips. Lower part of the limb with a

yellow convex spongy mass round the opening of passage to the chamber. Walls of chamber smooth with purple longitudinal rulings on a light background. Material of spathe on dissection very coarsely cellular. The valve on the lower part of the passage shaped like half the shell of a bivalve with pale purple concentric rings on a flesh coloured ground. *Ovaries* in a spherical mass, bright yellow with a red flush and a red network defining the individuals. *Male flowers* form a yellow truncated cone with the base downward. *Spadix* between the two sets of flowers reduced to a slender white rod. Of 33 inflorescences examined 17 had the arc-shaped opening convex to the left and 16 to the right. *Syncarp* 1 in. diameter. Exposed ends of berries dark-green, thick, very bluntly conical, irregularly and deeply furrowed, sides thin, white, translucent. Of 3 syncarps examined one had 69 berries with 240 seeds with an average of 3·5 per berry (7 were empty), the next had 60 berries with 170 seeds, average 2·8 and the third had 60 berries. The seeds are like caraway seeds to the naked eye, and are attached at the base of the cell and often remain attached to the peduncle when the berry is pulled off. They are dark-purplish, becoming dark-green in places with about 15 ridges with short scattered white hairs ; apex bluntly pointed, base rounded.

This plant appears to resemble *Lagenandra Meeboldii* (Engl.) C. E. C. Fischer in size of rhizome and shape of leaves but differs in the much longer tail to the spathe, 2-keeled cataphylls, peduncles over 1 in. long and not slender, the spathe being flesh-coloured to light-brown (in shape and colour suggesting a pale tamarind pod) and the ridged and fringed inside wall of the spathe limb.

Growing on the margins of the Kalduritty stream near Tenmalai, Travancore at about 1000 ft."

Specimens at Kew ; S. Konkan, fls. Feb., *Dalziel* ; N. Kanara, immature fls. March, *W. A. Talbot* 8877 ; without locality *Stocks* in Madras Coll. 61. Travancore : Kalduritty Stream, Tenmalai, 1000 ft., fls. Dec., *E. Barnes* 638, 639, 640, 641, 643, 804 ; fls. and frt. March, *E. Barnes* 1000, 1001, 1002, 1003."

Oxytenanthera nigrociliata *Munro* var. **Hohenackeri** *C. E. C. Fischer.* var. nov. [Gramineae] ; a forma typica foliorum vaginis truncatis rigide ciliatis, spiculis omnibus partibus minoribus recedit.

Spikelets 11–12 mm. long. *Glumes* 2–4, the lowest 2·5–4 mm. long, the uppermost 5–6 mm. long. *Lemmas* usually 4, the lowest 7–7·5 mm. long, the uppermost 9·5–11·5 mm. long. *Grain* subulate, blunt, 6·3–8·7 mm. long.

Coorg, near Mercara, *Hohenacker* 527 (type in Herb. Kew.). S. Kanara, without precise locality, *Rhodes Morgan* (in Herb. Madras.) and *G. F. F. Foulkes* (in Herb. Kew.).

In his description of the species in Trans. Linn. Soc. **26** 128 (1868) Munro quotes the sheet of Hohenacker referred to, above and gives the locality as " Madras, Canara, Mercara." This sheet

is in the Kew Herbarium. Attached to it is a note in Munro's own hand which reads : " This is so exactly like a specimen collected near Moulmeyn by Falconer in 1849 that I cannot help thinking this label is accidentally placed here. I have never seen any specimen from the continent of India. I have never seen any other specimen with ciliated ligules and do not think that these leaves belong to the flowers. I have however quoted Hohenacker's number."

In his monograph on the *Bambuseae* of British India in Ann. Bot. Gard. Calc. **7**, 69 (1896), Gamble states under this species : " Said to occur also in Coorg and Canara, but this requires further investigation ; the specimens were collected by Hohenacker and by no one else."

The Hohenacker sheet consists of a small twig bearing 2 rather small leaves and 3 separate spikes, the longest being about 43 cm. long ; the clusters of spikelets do not exceed 6 individuals.

Mr. Rhodes Morgan's sheet has 4 spikes, the spikelets numerous in the clusters ; no leaves.

Mr. Foulkes' 5 sheets contain twigs with several mature leaves and numerous detached spikelets in capsules, which agree with those on the Hohenacker sheet. These sheets were identified as " *Oxytenanthera Thwaitesii* Munro," by Mr. Foulkes, but on one of them Mr. Gamble has written in pencil on the 12th Dec., 1912, " I do not feel at all sure about the identification of this."

Mr. Foulkes assures me that the bamboo was truly wild and not cultivated and believes that he found it " at the foot of the Ghats in the Uppinangadi Taluq."

No culms or culm-sheaths are available, nor inflorescence connected with the leaves. It is possible that these specimens should be described as a distinct species, but until more complete material is available, it is preferable to treat them as above.

VII—MISCELLANEOUS NOTES.

Sir David Prain.—At the twenty-ninth annual meeting of the Botanical Society of America at Pittsburgh, on December 27th, Sir David Prain, C.M.G., F.R.S., was elected a Corresponding Member.

John Fraser.—The death of Mr. John Fraser, V.M.H., F.L.S., a week before his eighty-first birthday removes a figure well-known to horticulturists and botanists familiar with the activities of the Royal Horticultural Society and of Kew.

Fraser was born on 31st January, 1854, at Newdeen, 15 miles from Fraserburgh, Aberdeenshire, and was the eldest of a family of seven children. He commenced his horticultural and botanical career in 1874 and continued his studies in Scotland for about five and a half years. In February, 1880, he joined the staff of the Royal

Horticultural Society, at the old Chiswick gardens. About two years later he moved to Kew where for a time he was in charge of the Rock Garden and later of some of the glasshouses. In 1885 he commenced work in the Jodrell Laboratory on behalf of Sir John Lubbock, afterwards Lord Avebury. Much, if not most, of the detailed research underlying Lord Avebury's classical publications on seeds, seedlings, buds, stipules, pollen, and other botanical subjects, was done by Fraser, whose connection with Lord Avebury lasted till 1912. He became Assistant Editor of the "Gardening World" in 1887 and was Editor from 1895 to 1909. He wrote or contributed to several well-known horticultural works, including the 1917 edition of "Johnson's Gardeners' Dictionary." He was also a prolific, and often anonymous, writer to various horticultural and botanical periodicals. He had a detailed acquaintance with many groups of cultivated plants, especially with potatoes and the genus *Pelargonium*.

In addition to his wide experience of gardening, and his work for Lord Avebury, Fraser had an intimate knowledge of British plants, both in the field and in the herbarium. He was a frequent visitor to the Herbarium at Kew, where he made extensive use of the plant collections and the library. In his later years he specialized on the difficult genera *Salix* and *Mentha*, on which he became a recognised authority, and published valuable accounts. Most recently he returned to the study of seedlings, and had accumulated a beautifully preserved and mounted set of the early stages of growth of some hundreds of British species.

Fraser died in Charing Cross Hospital on 24th January, 1935, from pneumonia, following injuries from being knocked down by a cyclist while crossing Kingsway a week earlier, and is buried in Richmond cemetery. His herbarium of about nine thousand sheets, rich in Scottish plants and in the genera on which he specialized, and his manuscript notebooks, have been presented, at his written desire, to the Royal Botanic Gardens, Kew, by members of his family. He was elected a Fellow of the Linnean Society in 1889. The Royal Horticultural Society awarded him the Victoria Medal of Horticulture in 1922 and the Veitch Memorial Medal in 1929.

Fraser was a very modest and retiring character, but he was always most willing to help any who sought for information on botanical or horticultural subjects. His friends will miss his kindly aid and will treasure the remembrance of a courteous gentleman who combined with independence of character the rare ability of never hurting the feelings of others. W. B. TURRILL.

WALTER E. BROADWAY.—We learn with regret of the death on January 1st of Mr. W. E. Broadway, M.B.E., for many years associated with horticultural and agricultural work in the West Indies. Mr. Broadway was a student at Kew, leaving in 1888.

In 1894 he was appointed Curator of the Botanic Gardens in Grenada, where he remained until 1903, when he set up as a nurseryman in the same island. In 1910 he was appointed Curator of the Botanic Station at Tobago, and in 1915 Horticulturist and Assistant Botanist in Trinidad, retiring in 1922. He was awarded the M.B.E. in 1934.

It is as a botanical collector that Broadway will be best remembered by botanists in many parts of the world. He was probably the most considerable collector there has ever been in Trinidad and Tobago, and his name is associated with very many new species described at Berlin by the late Prof. Urban. Kew constantly received parcels from him, both as gifts and by purchase, but we have not nearly a complete representation of his collections. The best set is at Berlin, while others are at the British Museum, Stockholm and the New York Botanical Garden. In 1921 he undertook a collecting expedition to French Guiana on behalf of the United States National Museum, the Gray Herbarium, and the New York Botanical Garden. In 1933 he published, jointly with Dr. Lyman B. Smith of the Gray Herbarium, an account of the *Bromeliaceae* of Trinidad and Tobago, see Contr. Gray Herb. **102,** 152–188. Were it not for Broadway's large and continuous series of collections the vegetation of Trinidad and Tobago would still be far too incompletely represented in Herbaria, and his name appears on nearly every page of the Flora of these islands which is now in course of publication. N. Y. SANDWITH.

C. S. Rogers.—We record with regret the death on December 9th last of Mr. C. S. Rogers, late Forest Officer in Trinidad and Tobago.

***British Guiana Timbers.**—The value of this book to foresters, timber merchants and manufacturers cannot be estimated from its size, for, although it only runs to 73 pages, it is full of the kind of information required by those engaged in the exploitation of timber.

Reference is made in the preface to the timber requirements of Great Britain and the part British Guiana is prepared to take in filling the demand. On page 11 some particulars are given of the position of the principal forests in British Guiana and the climatic conditions of the country. The topography of the forest lands, the estimated amount and accessibility of available timber, and methods of exploitation are then dealt with. The author considers that a good deal of the best timber could be extracted by means of a logging railway 16 miles long at a cost of £35,000, with rolling stock capable of dealing with 500 tons of timber per day at an additional cost of £12,000. Timber drying methods are described

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* By Gerald O. Case, F.S.E., Consulting Engineer. Metcalfe & Cooper, Ltd., Wool Exchange, London, E.C.2. 1934. Pp. 73. Illustrations 2. Price 7s. 6d.

with illustrations of drying sheds. Markets and possible markets are discussed and comparisons made between the forests of British Guiana and those of other countries. Descriptions are given of the most important timbers, amongst which greenheart, wallaba, purple-heart, crabwood, mora, bullet wood and cedar are prominent. Tables of strength tests are included, and the uses of British Guiana timbers are discussed at length under the headings: furniture, joinery, boat-building, railway sleepers, flooring, staircases, fire-resisting timbers, paper-making, marine and river work, ship-building, motor-car bodies, etc. The manufacture of charcoal also receives attention. At the end of the book 104 kinds of trees are referred to under their common names with the average number of trees occurring per square mile. Wallaba heads the list with 3,808 and greenheart is second with 1,942.

W. DALLIMORE.

Scolt Head Island.*—In view of the many articles and scientific papers which have been published on the geography and biology of Blakeney Point in Norfolk, it is interesting to read this account of the neighbouring and very similar area of Scolt Head. The book consists of a number of chapters dealing with various aspects of the island and its natural history, written by different contributors and edited by Mr. J. A. Steers, the whole providing a preliminary account which must not be considered in any way complete or final.

The two most important sections deal with the Physiography and Evolution of the Island, written by the Editor, and the Plant Ecology, contributed by Mr. V. J. Chapman. Other chapters deal with the Petrology of the Beach Pebbles, Pollen Analyses of Peats, the Bryophyta, the Lichens, the Mammals, the Breeding Birds, the Marine Invertebrate Fauna, the Non-Marine Mollusca, and Geographical Problems. There is also a list of all the plants so far recorded in the form of an Appendix.

Altogether the book provides an interesting account of our present scientific knowledge of a well-defined and characteristic maritime area. It is very satisfactory to realise that the island is controlled by the National Trust and that consequently every facility is being provided for the active continuation of scientific work along the lines already indicated.

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* Scolt Head Island. The Story of its Origin: The Plant and Animal Life of the Dunes and Marshes. Edited by J. A. Steers. Pp. xvi + 234, 34 plates, 17 text figures and 1 map. W. Heffer & Sons, Ltd., Cambridge, 1934. Price 15s.

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